

1 33. Apparatus according to claim 31, wherein the recess extends from the aperture to one end of the
2 cylindrical liner.

1 34. Apparatus according to claim 31, wherein:

2 the recess extends from the aperture to one end of the cylindrical liner; the aperture and the
3 recess are each characterized by a respective circumferential width dimension along the circumference
4 of the liner; and

5 the recess has a circumferential width equal to or greater than the circumferential width of the
6 aperture.

1 35. Apparatus according to claim 31, wherein:

2 the cylindrical liner is characterized by a longitudinal axis;

3 the aperture has an axial height dimension parallel to said longitudinal axis and a circumferential
4 width dimension along the circumference of the liner; and

5 the circumferential width of the aperture is much larger than the axial height of the aperture.

1 36. Apparatus according to claim 31, further comprising:

2 an arcuate door having a radially inner surface dimensioned so as to permit the radially inner
3 surface of the door to move between a first position at which the radially inner surface of the door
4 covers the aperture and a second position at which the entire radially inner surface of the door is within
5 the recess.

1 37. Apparatus according to claim 31, wherein:

2 the cylindrical liner is characterized by first and second ends and a longitudinal axis;

3 the aperture has first and second opposite sides respectively facing the first and second ends of
4 the liner;

5 the recess includes first and second portions respectively adjacent to the first and second sides
6 of the aperture;

7 the radially outer surface of the first portion of the recess is beveled so that its radial distance
8 from the longitudinal axis of the liner decreases progressively from adjacent the aperture toward the
9 first end of the liner; and

10 the radially outer surface of the second portion of the recess is beveled so that its radial distance

from the longitudinal axis of the liner increases progressively from adjacent the aperture toward the second end of the liner.

38. Apparatus according to claim 37, wherein:

the first portion of the recess has a minimum radial distance from the longitudinal axis of the liner that is substantially less than the maximum radial distance of the second portion of the recess from the longitudinal axis of the liner.

39. Apparatus according to claim 37, further comprising:

an arcuate door having a radially inner surface extending between a first end and a second end of the door;

wherein the radially inner surface of the door adjacent the first end is beveled so as to be congruent with the radially outer surface of the first portion of the recess; and

wherein the radially inner surface of the door adjacent the second end is beveled so as to be congruent with the radially outer surface of the second portion of the recess.

40. A chamber liner apparatus for covering a portion of a cylindrical side wall of a plasma chamber, comprising:

a cylindrical liner characterized by first and second ends, a longitudinal axis, a radially inner surface, and a radially outer surface;

wherein the liner includes an aperture extending between the radially inner and outer surfaces of the liner, the aperture having first and second opposite sides respectively facing the first and second ends of the liner, and the liner having first and second portions respectively adjacent to the first and second sides of the aperture;

wherein the radially outer surface of the first portion of the liner is beveled so that its radial distance from the longitudinal axis of the liner decreases progressively from adjacent the aperture toward the first end of the liner; and

the radially outer surface of the second portion of the liner is beveled so that its radial distance from the longitudinal axis of the liner increases progressively from adjacent the aperture toward the second end of the liner.

1 41. Apparatus according to claim 40, wherein:

2 the radially outer surface of the first portion of the liner has a minimum radial distance from the
3 longitudinal axis of the liner that is substantially less than the maximum radial distance of the radially
4 outer surface of the second portion of the liner from the longitudinal axis of the liner.

1 42. Apparatus according to claim 40, further comprising:

2 an arcuate door having a radially inner surface extending between a first end and a second end;
3 wherein the first end of the radially inner surface of the door is beveled so as to be congruent
4 with the radially outer surface of the first portion of the liner; and
5 wherein the second end of the radially inner surface of the door is beveled so as to be
6 congruent with the radially outer surface of the second portion of the liner.

1 43. A slit valve door for a plasma chamber, comprising:

2 an arcuate door having a radially inner surface extending between a first end and a second end
3 of the door;

4 wherein the radially inner surface of the door adjacent the first end is beveled so that the
5 radially innermost portion of said radially inner surface is at the first end of the door; and

6 wherein the radially inner surface of the door adjacent the second end is beveled so that the
7 radially outermost portion of said radially inner surface is at the second end of the door.

Respectfully submitted,



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